



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/091,508 10/30/98 CONNORS

3 68567/PALL

LEYDIG VOIT & MAYER
700 THIRTEENTH STREET N W
SUITE 300
WASHINGTON DC 20005

IM22/1109

EXAMINER

OCAMPO, M

ART UNIT

PAPER NUMBER

1723

DATE MAILED:

11/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.		Applicant(s)	
	09/091,508		CONNORS ET AL.	
	Examiner		Art Unit	
	Marianne S. Ocampo		1723	

-- Th **MAILING DATE** of this communication appears on the cover sheet with the **c** **respondence address** --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 14-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 October 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>20</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Transitional After Final Practice

1. Since this application is eligible for the transitional procedure of 37 CFR 1.129(a), and the fee set forth in 37 CFR 1.17(r) has been timely paid, the finality of the previous Office action is hereby withdrawn pursuant to 37 CFR 1.129(a). Applicant's first submission after final filed on 10-24-01 has been entered.

Drawings

2. The proposed drawing corrections and/or the proposed substitute sheets of drawings, filed on 10-24-01 have been approved.

Status of the Claims

3. Claims 1 and 14 –19 are still pending. Claims 2 and 20 – 24 has been canceled by amendments after final filed on 10-24-01.

Allowable Subject Matter

4. The indicated allowability of claims 1 and 14 – 19 are withdrawn in view of the newly discovered references to Rosaen (US 3,984,325), Pall (US 4,228,012) and Pall (US 4,033,881) . Rejections based on the newly cited references follow.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 14 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosaen (US 3,984,325) in view of Stoyell et al. (US 5,543,047) and Pall (US 4,228,012).

7. Concerning claim 1, Rosaen (325) discloses a separation element (28, 22, 24, 24') comprising two or more hollow pleated pack sections (22, 24, 24'), each pack section including a porous medium having a plurality of pleats (28) and first and second ends, wherein the plurality

of pleats includes roots, crowns, legs extending between roots and crowns, an inner periphery at the roots defining an upstream side and an outer periphery at the crowns defining a downstream side, and joiner caps (30, 32) attached to one end of each of the two or more pack sections (22, 24, 24'), adjacent joiner caps (30, 32) being secured to coaxially connect the pack sections and joiner caps into a hollow separation arrangement which could be at least about 40 inches in length, depending upon the number of pack sections joined together or the length of individual pack sections being joined together and may also have an interior diameter of at least about 2 inches depending upon the size of the housing (12) and its inner diameter in which the filter/separation element (28) would be placed into, and further the separation element comprising first and second end caps (upper end cap 32 & lowest end cap 30) attached to the hollow separation arrangement wherein one of the first and second end caps (32, 30) comprises a seal (34) having an outside diameter greater than the largest outside diameter of the hollow separation arrangement, as in figs. 1 – 2 and 6 and in cols. 2 – 4. However, Rosaen fails to disclose each pleat has a height h greater than $(D-d)/2$ where D is the outer diameter at the outer periphery of the plurality of pleats, and the porous medium comprising a polymeric or glass fiber material and the joiner caps and end caps also comprising polymeric, thermoplastic or elastomeric material. Stoyell et al. (047) teach a filter element/pack section (10) having a plurality of pleats (11) including roots (11c), crowns (11b), legs extending between the roots and the crowns, an inner periphery at the roots defining an upstream side and an outer periphery at the crowns defining a downstream side, and wherein each pleat (11) has a height h greater than $(D-d)/2$ where D is the outer diameter at the outer periphery of the plurality of pleats, and having

first and second ends and a porous medium (12) comprising a polymeric or glass fiber material, as in figs. 1 – 4 and cols. 3 – 5. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter/separation element of Rosaen, particularly each pack section in lieu of the pack section/filter element taught by Stoyell et al., in order to provide an improved filtering/pack section/separation element having increased surface area which increases the useful life of the filtering/separation element or pack section, as well as having greater resistance to damage, as in col. 16, lines 49 – 63.

8. Rosaen, as modified by Stoyell et al., fails to disclose the joiner caps and end caps also comprising polymeric, thermoplastic or elastomeric material. Pall (012) teaches a filter comprising a plurality (two or more hollow pack sections of pleated/corrugated polymeric filtering medium) of hollow pack sections, each pack section having a plurality of pleats (by being corrugated) and a porous medium (86) comprising a polymeric material (polyamide), and further comprising joiner caps (40, 41) and end caps (90, 41, 40, 100) comprising polymeric, thermoplastic or elastomeric material, as in figs. 5 – 7 and cols. 7 – 9. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the joiner caps and end caps of the filter element/separation element of Rosaen, as modified by Stoyell et al., in order to provide an alternative and improved design for a separation element (having plurality of hollow pack sections connected together) which can be easily and rapidly assembled end to end by press-fit and detached by pulling or prying, thereby having joiner caps and end caps which are

self-locking, simple to use, effective and inexpensive means for coupling, as in col. 5, lines 33 – 52.

9. With respect to claim 14, Rosaen also discloses each pack section (22, 24, 24') having a core disposed along the inner periphery of the pleats (28), as in fig. 3.

10. Regarding claim 15, Rosaen fails to disclose each pack section being free of a core. Stoyell et al. teach the pack section/filter element (10) having a core (20) for supporting the inner periphery of the pack section/element (10), and alternatively, the pack section (10) may be free of a core (20), particularly when the fluid flow through the pack section (10) is primarily from inside to outside, in the instance that radial inward forces on the pack section (10) are low or absent and having a core (20) would then be unnecessary, as in cols. 7, lines 61 - 67 and 8, lines 1 – 11. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the pack sections of the separation element of Rosaen, such that each pack section is free of a core, as taught by Stoyell et al., in order to provide a filtering element which is more light weight, particularly in instances where the separation element is used when radial inward forces on the pack sections are low or absent and having a core (20) would then be unnecessary, such as when fluid flow through the separation element/pack sections are directed from inside to outside of the element/pack sections, as in col. 8, lines 7 - 11.

11. Concerning claim 16, Rosaen further discloses the end cap (32) having a seal (34) comprising an open end cap including a substantially cylindrical configuration having an outer periphery and a channel circumferentially arranged in the outer periphery and the seal (34) being positioned in the channel, as in figs. 1 – 2 and 6.

12. With regards to claim 17, Rosaen fails to disclose each pack section being free of a core. Stoyell et al. teach the pack section/filter element (10) having a core (20) for supporting the inner periphery of the pack section/element (10), and alternatively, the pack section (10) may be free of a core (20), particularly when the fluid flow through the pack section (10) is primarily from inside to outside, in the instance that radial inward forces on the pack section (10) are low or absent and having a core (20) would then be unnecessary, as in cols. 7, lines 61 - 67 and 8, lines 1 – 11. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the pack sections of the separation element of Rosaen, such that each pack section is free of a core, as taught by Stoyell et al., in order to provide a filtering element which is more light weight, particularly in instances where the separation element is used when radial inward forces on the pack sections are low or absent and having a core (20) would then be unnecessary, such as when fluid flow through the separation element/pack sections are directed from inside to outside of the element/pack sections, as in col. 8, lines 7 - 11.

13. Regarding claim 18, Rosaen fails to disclose the legs of the pleats are in intimate contact along substantially the entire height of the pleats. Stoyell et al. also teach the legs of the

pleats (11) are in intimate contact along substantially the entire height (i.e. also known as in “laid over state”) of the pleats (11), as in col. 4 and figs. 2 – 3. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the pleated filter medium/pack sections of Rosaen, in lieu of the pleated filter medium/pack section (10) taught by Stoyell et al., in order to provide an improved filtering/pack section/separation element having increased surface area which increases the useful life of the filtering/separation element or pack section, as well as having greater resistance to damage, as in cols. 4, lines 22 – 29 and 16, lines 49 – 63.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosaen, Stoyell et al. and Pall (012), as applied to claim 1 above, and further in view of Pall (US 4,033,881).

15. Concerning claim 19, Rosaen, as modified by Stoyell et al. and Pall (012), fails to disclose the adjacent joiner caps being welded together. Pall (881) teach a filter/separation element comprising two or more hollow pleated pack sections (10, 25) being joined by joiner/end caps (16, 17) to form a hollow separation arrangement, wherein adjacent joiner caps (right end cap 16, second end cap 17 attached to right end cap 16) are welded together, as in figs. 2 – 3 and cols. 5 – 6, particularly, in col. 6, lines 28 – 34. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the adjacent joiner caps of the separation element of Rosaen, as modified by Stoyell et al. and Pall (012), in lieu of the welded

adjacent joiner caps taught by Pall (881), in order to provide an alternative design and improved separation element having joiner caps which are more leak-proof than those having seals/gaskets joining separate joiner caps together, thus avoiding any contaminated/unfiltered fluid leaking into the cleaned/filtered fluid region of the separation element.

Response to Arguments and Amendments

16. Applicant's arguments with respect to claims 1 and 14 - 19 have been considered but are moot in view of the new grounds of rejection mentioned above. **This action is non-final.**

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 4,609,465 (Miller), 4,422,790 (Gebert et al.) and 5,851,267 (Schwartz).

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-1039. The examiner can normally be reached on Mondays to Fridays from 8:00 A.M. to 4:30 P.M..

Art Unit: 1723

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

20. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

M.S.O.

November 7, 2001